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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/678,461	10/03/2003	Michael John Gidley	F3319(C)	3331

201 7590 04/03/2007

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EXAMINER	
STULII, VERA	
ART UNIT	PAPER NUMBER
1761	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/03/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/678,461	GIDLEY ET AL.	
	Examiner	Art Unit	
	Vera Stulii	1761	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01 August 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-15* is/are pending in the application.

4a) Of the above claim(s) *6-12* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5 and 13-15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

The Examiner of this application has changed. Please direct all further correspondence to Examiner Vera Stulii, Art Unit 1761.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-5 and 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamane et al (EP 0,815,746) in view of Fellows (Food Processing Technology - Principles and Practice). Francis et al (Wiley Encyclopedia of Food Science and Technology) is cited as evidence as discussed below.

Yamane et al disclose the method of manufacturing fruit by cooling fruit below the freezing point (p. 3 lines 30-34). Yamane et al disclose rapidly cooling fruit from room temperature to a temperature that is close to a freezing point (0°C), and then slower cooling to a temperature that is below freezing point (p. 3 lines 45-47). Yamane et al also disclose that the slow cooling can be combined with a rapid freezing treatment, in which the food is frozen at -18°C or lower, for example, from supercooled state below the freezing point [0041]. Yamane et al also disclose freezing points and regions below the freezing point from -1°C to -18°C [0031]. Thus Yamane et al discloses a process for production of frozen fruits comprising the steps of cooling fruits to 0°C (temperature that is close to a freezing point), under-cooling fruits from 0°C to a temperature up to -18°C, and then reducing the temperature further to produce the fruit in a frozen state. Yamane et al disclose a cooling rate range of 0.01-0.5°C/hour (Abstract). Yamane et al also disclose freezing points of fruits from -0.9°C to -2.4°C and regions below the freezing point from -1°C to -18°C [0031]. Yamane et al disclose the following fruits: persimmon, apple, lemon, cherry, asian pear, strawberry, fig, peach, blueberry, apricot [0031].

Yamane et al do not disclose recited cooling range, temperature difference between the core and the surface of fruit, and a particular fracture force.

Fellows discloses the influence of freezing rate on plant tissues (Fig. 21.6). Fellows discloses that"[d]uring slow freezing, ice crystals grow in intercellular spaces and deform and rupture adjacent cell walls. Ice crystals have a lower water vapour pressure than regions within the cells, and water therefore moves from the cells to the growing crystals. Cells become dehydrated and permanently damaged by the increased solute concentration and a collapsed and deformed cell structure. On thawing, cells do not regain their original shape and turgidity" (p.432). Fellows discloses "[i]n fast freezing, smaller ice crystals form within both cells and intercellular spaces. There is little physical damage to cells, and water vapour pressure gradients are not formed; hence there is minimal dehydration of the cells. The texture of the food is thus retained to a greater extent (Fig. 21.6(b))" (p.432). Fellows discloses that very high freezing rates "may cause stresses within some foods that result in splitting or cracking of the tissues" (p.432).

Since Yamane et al discloses cooling and freezing fruits at a particular freezing rate, and since Fellows et al teaches that slow freezing rates cause deforming and rupture of plants' cell walls and that fast freezing leads to splitting or cracking of tissues, it would have been obvious to modify disclosure of Yamane at al and vary freezing rate in order to produce a frozen product that would preserve its original shape, cell structure, and turgidity on thawing as taught by Fellows et al. It would have also been obvious to vary freezing rate in order to achieve desired texture, i.e. desired fracture force as a measurement of mechanical properties of food in relation to texture. As

evidenced by Francis et al (Wiley Encyclopedia of Food Science and Technology) "[t]he freezing rate may be evaluated by the speed of movement of the ice (in centimeters per hour) through a product. This speed is faster near the surface and slower toward the center" (p. 1117). Therefore, it would have been obvious to vary freezing rate in order to achieve desired difference in temperature between the core and the center.

Response to Arguments

Applicant's arguments with respect to claim1-5 and 13-15 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vera Stulii whose telephone number is (571) 272-3221. The examiner can normally be reached on 7:00 am-3:30 pm, Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Milton Cano can be reached on (571) 272-1398. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Vera Stulii /V. Stulii/

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